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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/053,208	01/18/2002	David H. DeYoung	98-2331	4055

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EXAMINER
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COMBS, JANELL A

ART UNIT	PAPER NUMBER
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1742

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DATE MAILED: 08/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/053,208

Applicant(s)

DEYOUNG ET AL.

Examiner

Janelle Combs-Morillo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 18 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 16, 19 and 21-63 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 43-49 and 57-63 is/are allowed.
- 6) ☒ Claim(s) 16, 19, 21-27, 36, 37, 42, 50, 51 and 56 is/are rejected.
- 7) ☒ Claim(s) 28-35, 38-41 and 52-55 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3 and 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Interpretation*

1. Independent claim 36 refers to “AA7050-type aluminum alloy”, and independent claim 50 refers to “AA7055-type aluminum alloy”. In view of the instant specification, the examiner has interpreted this to mean 7050 or 7055 alloys, respectively, as registered with the Aluminum Association (the exact 7050 or 7055 alloy, not a family or group of alloys).

Claim 43 refers to “about 0.08 to 0.15 about zirconium...about 0.001 to about 0.25 wt% grain refiners, the balance essentially aluminum”. The examiner has interpreted the grain refiners to be in addition to zirconium. Claim 57 has similar language, and likewise the examiner has interpreted the grain refiners to be in addition to zirconium.

Claim 36 refers to “AA7050-type aluminum alloy... comprising from about 5 to about 5000 ppm calcium, from about 0.001 to about 0.25 wt% grain refiners”. Given the instant claim language, in this instance the examiner has interpreted the grain refiners to not be in addition to the AA7050 composition. The examiner points out that the registered composition of 7050 contains 0.08-0.15% Zr, and therefore meets the limitation of “from about 0.001 to about 0.25 wt% grain refiners”. Claim 50 has similar language, and likewise the examiner has interpreted the grain refiners to not be in addition to the 7055 composition.

If this interpretation is not consistent with applicant’s intended interpretation, please clarify (including where said interpretation is found in the original specification) in response to this action.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 16 and 22-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Igarashi (US 2,166,496 A).

Igarashi teaches an example of a 7000 series aluminum alloy comprising (in weight%): 8% Zn, 0.02% Cr, 0.02% Ca = 200 ppm Ca, (Ex. 4), which falls within the presently claimed compositional ranges. Igarashi does not mention the presence of Be, and therefore the Be content is held to be substantially zero. The examiner points out that Cr qualifies as a grain refiner, and Igarashi teaches that said addition of Cr and Ca achieves good forgability, a remarkable resistance to cracking (column 2 lines 35-36), and these elements make the grain structure much finer in the cast state (column 1 lines 40-41). Therefore the alloy taught by Igarashi meets the instant limitation of “improved as-cast surface quality”.

Concerning dependent claims 22-24, as stated above, Igarashi teaches an example within the presently claimed alloying ranges.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 16, 19, 21-25, 36, 37, 42, 50, 51, and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murtha (US 5,496,426 A).

Murtha teaches a 7000 series aluminum alloy comprising (in weight%): 7.6-8.4% Zn, 1.8-2.2% Mg, 2-2.6% Cu, preferably 0.05-0.25% Zr (abstract), and less than 0.02% Ca (< 200 ppm) as an impurity (column 5 lines 66-67). Murtha does not mention the presence of Be, and therefore the Be content is held to be substantially zero. Murtha teaches said 7000 series alloy is typically ingot derived (column 6 lines 17-18).

Murtha does not teach an “improved as-cast surface quality” (independent claims 16, 36, and 50). The examiner asserts that “products of identical chemical composition can not have mutually exclusive properties.” *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims, such as as-cast surface quality, are expected to occur. See MPEP 2112.01.

Because Murtha teaches an overlapping alloy composition, it is held that Murtha has created a prima facie case of obviousness of the presently claimed invention. Overlapping ranges have been held to be a prima facie case of obviousness, see MPEP § 2144.05, *In re Best* 195 USPQ 430, *In re Malagari*, 182 USPQ 549, *In re Titanium Metals Corporation of America v.*

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*Banner*, 227 USPQ 773 (Fed. Cir 1985), *In re Woodruff*, 16 USPQ 2d 1934, and *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976). 16, 19, 21-25, 36, 37, 42, 50, 51, and 56

Concerning dependent claims 19, 22-25, 37, and 51, as stated above, Murtha teaches an overlapping alloy composition.

Concerning dependent claims 21, 42, and 58, as stated above, Murtha teaches said 7000 series alloy is typically ingot derived (column 6 lines 17-18).

6. Claims 19, 21, and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Igarashi (US 2,166,496 A).

Igarashi teaches a 7000 series aluminum alloy comprising (in weight%): 1-3% Cu, 4-20% Zn, 1-2% Mg, 0.1-2% Mn, 0.01-0.5% Cr, 0.01-0.2% Ca (column 1 lines 47-51), and optionally 0.01-0.5% titanium (column 2 line 48). Igarashi teaches that said addition of Cr and Ca achieves good forgability and a remarkable resistance to cracking (column 2 lines 35-36), and that the instant range of Ti “increases the quality of the alloys to a large extent” (column 2 lines 49-50).

Concerning dependent claims 19, 25-27, Igarashi teaches the optional addition of 0.01-0.5% titanium (column 2 line 48), which overlaps the presently claimed ranges.

Concerning dependent claim 21, Igarashi teaches casting, forming into a strip, and heat treating said 7000 series alloy (column 1 line 40, 55-60).

Because Igarashi teaches an overlapping alloy composition, it is held that Igarashi has created a prima facie case of obviousness of the presently claimed invention, see MPEP § 2144.05.

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***Allowable Subject Matter***

7. Independent claims 43 and 57 are allowable over the prior art of record. Likewise, dependent claims 44-49 and 58-63 are allowable. The prior art does not teach or suggest an aluminum alloy with the presently claimed compositional ranges, complete with the instant range of Ca and grain refiners.

8. Claims 28-35, 38-41, and 52-55 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art does not teach or suggest an aluminum alloy with the presently claimed compositional ranges, complete with the instant range of Ca and grain refiners.

***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janelle Combs- Morillo whose telephone number is (703) 308-4757. The examiner can normally be reached Monday through Friday from 7:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King, can be reached on (703) 308-1146. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

jcm



July 30, 2003

ROY KING   
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700